

Appendix B

Major Disturbances and Unusual Occurrences

Table B.1. Major Disturbances and Unusual Occurrences, Year-to-Date through December 2004

Date	Utility/Power Pool (NERC Region)	Time	Area Affected	Type of Disturbance	Loss (megawatts)	Number of Customers Affected ¹	Restoration Date/Time
January							
1/01/04	Pacific Gas and Electric Company (WECC)	7:30 a.m.	Northern California	Winter Storm	170	263,000	1/02/04, 4:00 p.m.
1/07/04	Puget Sound Energy (WECC)	Midnight	King County	Snow Storm	150	145,000	1/10/04, 5:00 p.m.
1/08/04	National Grid (New York) (NPCC)	3:00 p.m.	Lake Placid/Saranac, New York	Public Appeal to Reduce Load	100	18,600	1/10/04, 7:00 p.m.
1/14/04	National Grid (New York) (NPCC)	6:00 a.m.	Lake Placid/Saranac, New York	Public Appeal to Reduce Load	100	18,600	1/17/04, 12:00 noon
1/26/04	South Carolina Electric and Gas (SERC)	10:00 a.m.	Central South Carolina	Ice Storm	500-700	150,000	1/28/04, 8:00 a.m.
1/26/04	Southern Company (SERC)	2:00 p.m.	North and Central area of Georgia	Ice Storm	Less than 150	30,689	1/27/04, 8:00 p.m.
1/26/04	Progress Energy - Carolinas (Carolina Power and Light) (SERC)	4:00 p.m.	Central and Eastern North Carolina and Northern and Eastern South Carolina	Ice Storm	475	9,905	1/29/04, 6:30 a.m.
1/28/04	Baltimore Gas & Electric Company (MAAC)	1:09 p.m.	Harford County, Maryland	Ice Storm	Approx. 300	Approx. 70,000	1/29/04, 5:00 a.m.
February							
2/05/04	Allegheny Power (MAAC)	8:00 p.m.	Maryland, Southeastern West Virginia, Northern Virginia, Northern Pennsylvania and South Central Pennsylvania	Ice Storm	60	87,456	2/09/04, 8:00 p.m.
2/14/04	National Grid (Niagara Mohawk) (NPCC)	8:00 p.m.	Lake Colby, Lake Placid, Tupper Lake	Public Appeal to Reduce Load	Approx. 30	18,600	2/16/04, 12 noon
2/17/04	Crockett Cogeneration (WECC)	2:25 p.m.	San Francisco Bay area, California	Lightning struck Intertie Breaker	220	PG&E	2/17/04, 11:57 p.m.
2/25/04	Pacific Gas and Electric Company (WECC)	12:01 a.m.	Northern California	Winter Storm	240	505,000	2/26/04, 10:00 a.m.
2/26/04	Southern Company (SERC)	12:00 a.m.	Georgia	Severe Storm	10	47,165	2/26/04, 1:30 a.m.
March							
3/04/04	Electric Reliability Council of Texas (ERCOT)	5:00 a.m.	North Texas	High Winds - Severe Storm	Less than 300	63,000	3/16/04, 2:45 p.m.
3/07/04	Duke Energy Company/Duke Power Control Area (SERC)	6:30 p.m.	North and South Carolina	Severe Storm	1,000	206,000	3/09/04, 8:00 a.m.
3/08/04	Southern California Edison (WECC)	6:22 p.m.	Southern California not including LA	Inadequate Resources	300	Approx. 70,000	3/08/04, 6:55 p.m.
3/17/04	El Paso Electric Company (WECC)	1:27 p.m.	El Paso, Texas	Faulty Switch	Approx. 300	Approx. 100,000	3/17/04, 2:06 p.m.
April							
4/10/04	CenterPoint Energy (ERCOT)	8:00 p.m.	Houston, Texas and surrounding suburban areas	Thunderstorms	Approx. 100	85,000 at peak	4/11/04, 4:00 p.m.
4/12/04	Florida Power & Light (FRCC)	5:30 a.m.	FPL's service territory mostly in Naples and Ft. Myers Florida	Storm with High Winds	250	179,000	4/12/04, 10:15 a.m.
4/27/04	Snohomish County PUD #1 (WECC)	12:35 p.m.	Snohomish County Washington	Strong Winds	Approx. 300	187,000	4/30/04, 12:00 p.m.
May							
5/03/04	Southern California Edison (WECC)	2:30 p.m.	Central and Southern California	Heat Storm	662	Approx. 940	5/03/04, 7:00 p.m.
5/11/04	CenterPoint Energy (ERCOT)	3:30 p.m.	Houston, Texas and surrounding suburban areas	Strong Thunderstorms	Approx. 85	62,500 at peak	5/11/04, 6:00 p.m.
5/21/04	Ohio Edison (ECAR)	2:00 a.m.	Akron and Youngstown areas	Severe Thunderstorms	133 on 5/21/04 between 3:00 a.m. and 4:00 a.m., 392 on 5/21/04 between 4:00 p.m. and 5:00 p.m.	281,000	5/24/04, 12:00 a.m.
5/21/04	Cleveland Electric Illuminating Company (ECAR)	2:00 a.m.	Cleveland area	Severe Thunderstorms	177 on 5/21/04 between 3:00 p.m. and 5:00 p.m.	127,000	5/24/04, 12:00 a.m.
5/21/04	Allegheny Power (MAAC)	5:30 a.m.	Western Pennsylvania, Northern West Virginia, Western Maryland, Northern Virginia	High Winds and Heavy Rains	60 at peak, total 162	94,366 at peak, total 225,353	5/25/04, 12:00 a.m.

Table B.1. Major Disturbances and Unusual Occurrences, Year-to-Date through December 2004 (Continued)

Date	Utility/Power Pool (NERC Region)	Time	Area Affected	Type of Disturbance	Loss (megawatts)	Number of Customers Affected ¹	Restoration Date/Time
5/21/04	American Electric Power (ECAR)	11:00 a.m.	Northern and Southern Michigan, AEP Fort Wayne/Michigan Region, Buchanan, Elkhart, New Buffalo, South Bend, St. Joseph, Three Rivers areas	Severe Thunderstorms	303	122,600	5/26/04, 9:00 p.m.
5/21/04	Consumers Energy (ECAR)	1:00 p.m.	Lower peninsula of Michigan following cities: Grand Rapids, Kalamazoo, Battle Creek, Jackson, Bronson, Jonesville, Flint	Severe Thunderstorms	200	248,209	5/25/04, 12:00 p.m.
5/21/04	Detroit Edison (ECAR)	4:00 p.m.	Southeast Michigan	Severe Thunderstorms	630	Greater than 250,000	5/24/04, 8:00 p.m.
5/28/04	Seminole Electric Cooperative (FRCC)	12:00 p.m.	Florida counties of Gadsden, Wakulla, Leon, and Liberty	Public Appeals	0	0	5/31/04, 12:00 a.m.
5/28/04	City of Tallahassee (FRCC)	12:00 p.m.	Florida counties of Gadsden, Wakulla, Leon, and Liberty	Public Appeals	0	0	5/31/04, 12:00 a.m.
5/28/04	Progress Energy Florida (FRCC)	12:00 p.m.	Florida counties of Gadsden, Wakulla, Leon, and Liberty	Public Appeals	0	0	5/31/04, 12:00 a.m.
June							
6/01/04	TXU Electric Delivery (ERCOT)	5:00 p.m.	Collin, Dallas, Denton, Ellis, Parker, and Tarrant Counties, Texas	Severe Storms with Strong Winds	1,900	500,000	6/02/04, 1:00 a.m.
6/02/04	American Electric Power (ECAR)	1:46 a.m.	Shreveport, Louisiana	Severe Thunderstorms with Strong Winds	350	59,057	6/07/04, 4:00 p.m.
6/02/04	American Electric Power (ECAR)	2:35 a.m.	Tulsa, Oklahoma	Severe Thunderstorms with Strong Winds	280	56,874	6/06/04, 6:00 p.m.
6/12/04	Lincoln Electric System (MAPP)	5:37 p.m.	Lincoln, Nebraska	Tornado	428	120,212	6/12/04, 5:41 p.m.
6/14/04	Arizona Public Service (WECC)	7:41 a.m.	Phoenix, Arizona	Fault on Line	200	30,000	6/14/04, 2:39 p.m.
6/23/04	Idaho Power Company (WECC)	5:35 p.m.	Southern Idaho	Load Shedding	157	35,000	6/23/04, 7:10 p.m.
6/23/04	Southern Company (SERC)	7:00 p.m.	Georgia and Alabama	Thunderstorms	50	50,595	6/23/04, 8:00 p.m.
July							
7/06/04	Salt River Project (WECC)	6:00 a.m.	Metro Phoenix, Arizona	Fire/Substation Multiple Public Appeals	-	-	8/09/04, 12:00 p.m.
7/06/04	Arizona Public Service (WECC)	6:00 a.m.	Metro Phoenix, Arizona	Fire/Substation Multiple Public Appeals	-	-	8/09/04, 12:00 p.m.
7/07/04	Dominion - Virginia Power/North Carolina Power (SERC)	1:30 p.m.	Central Virginia	Severe Thunderstorms	120	88,110	7/07/04, 11:54 p.m.
7/13/04	City of Tallahassee (FRCC)	1:34 p.m.	Leon County, Florida	Units Tripped	283	42,124	7/13/04, 5:15 p.m.
7/13/04	Cinergy Services (ECAR)	4:30 p.m.	West, West Central and Southern Indiana	Severe Thunderstorms	600	135,000	7/17/04, 8:00 a.m.
7/20/04	Southern California Edison (WECC)	2:26 p.m.	Soledad Canyon near Acton, California	Wildfire/Shed Interruptible Load	214	-	7/21/04, 2:00 a.m.
7/20/04	Puerto Rico Electric Power Authority (PR)	3:44 p.m.	Regions of San Juan, Caguas, Ponce, Bayamon, Carolina, Arecibo and Mayaguez	Wildfire	200	61,624	7/20/04, 5:51 p.m.
7/21/04	Commonwealth Edison (MAIN)	5:30 p.m.	Chicago, Illinois	Severe Thunderstorms	Approx. 200	200,000	7/22/04, 7:00 p.m.
7/24/04	Entergy Transmission (SPP)	3:45 p.m.	Southwest Louisiana in the Acadia Parish vicinity	Public Appeal	-	-	7/25/2004, 9:00 p.m.
7/25/04	Southern Company (SERC)	10:00 p.m.	Georgia, Alabama, Florida panhandle, Southern Mississippi	Severe Storms	61	61,004	7/25/04, 11:00 p.m.
August							
8/02/04	Entergy Transmission (SPP)	10:00 a.m.	Southeast Texas	Unplanned Generator Outage/High Loads Made Public Appeal	-	-	8/02/04, 8:00 p.m.
8/03/04	Commonwealth Edison (MAIN)	9:00 p.m.	Northern Illinois	Severe Storm	127	127,000	8/04/04, 7:00 a.m.
8/04/04	Southern California Edison (WECC)	12:46 p.m.	Northwest Orange County, California	Fault at Barre Substation	480	182,000	8/04/04, 1:50 p.m.
8/09/04	Puerto Rico Electric Power Authority (PR)	8:23 a.m.	Whole Island of Puerto Rico	Two Large Units Tripped	451.7	259,478	8/09/04, 11:10 a.m.

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Date	Utility/Power Pool (NERC Region)	Time	Area Affected	Type of Disturbance	Loss (megawatts)	Number of Customers Affected ¹	Restoration Date/Time
8/13/04	Progress Energy Florida (FRCC)	8:00 a.m.	Florida counties of Hardee, Highlands, Lake, Orange, Osceola, Polk, Seminole, Volusia	Hurricane Charley	1,300	502,000	8/23/04, 12:00 a.m.
8/13/2004	Florida Power & Light (FRCC)	3:00 p.m.	West Coast of Florida from Naples to Charlotte and in an area centered around Daytona Beach	Hurricane Charley	1,400	1,200,000	8/13/04, 11:00 p.m.
8/13/04	Seminole Electric Cooperative (FRCC)	1:30 p.m.	Florida counties of Collier, Hendry, Glades, Highlands, Charlotte, Desoto, Lee, Hardee, and Polk	Hurricane Charley	700	200,000	8/13/04, 12 a.m.
8/13/04	Tampa Electric Company (FRCC)	4:43 p.m.	Eastern Hillsborough, Polk County, Florida	Hurricane Charley	250	78,000	8/13/04, 8:24 p.m.
8/13/04	Utilities Commission, City of New Smyrna Beach (FRCC)	10:04 p.m.	New Smyrna Beach, Florida	Hurricane Charley	65	23,000	8/14/04, 4:23 p.m.
8/14/04	Progress Energy - Carolinas (SERC)	1:00 p.m.	Central and Eastern North Carolina and Northern and Eastern South Carolina	Hurricane Charley	500	94,000	8/14/04, 11:00 p.m.
8/20/04	National Grid USA (NPCC)	3:31 p.m.	Boston, Massachusetts	Major Transmission Line Tripped due to Lightning Strike	22,700	380,000	8/20/04, 9:45 p.m.
8/29/04	South Carolina Electric and Gas Company (SERC)	9: 52 a.m.	Southeastern South Carolina	Tropical Storm Gaston	450	125,000	8/29/04, 6:00 p.m.
8/30/04	Dominion - Virginia Power/North Carolina Power (SERC)	6:58 p.m.	Central Virginia, South to North Carolina and East to the Virginia Coast	Tropical Storm Gaston	150	99,816	8/31/04, 3:35 p.m.
September							
9/03/04	Fort Pierce Utilities Authority (FRCC)	9:00 p.m.	City of Fort Pierce, Florida	Hurricane Frances	125	26,000	9/05/04, 2:00 p.m.
9/04/04	Florida Power & Light (FRCC)	8:00 a.m.	West Palm Beach to Daytona Beach, Florida	Hurricane Frances	6,000	2,775,093	9/06/04, 8:00 a.m.
9/04/04	Tampa Electric Company (FRCC)	10:00 a.m.	Hillsborough, Pasco, and Polk County, Florida	Hurricane Frances	1,100	268,000	09/12/04, 7:00 p.m.
9/05/04	Orlando Utilities Commission (FRCC)	1:00 a.m.	Orlando, Florida	Hurricane Frances	200	65,000	09/09/04, 5:00 p.m.
9/05/04	Progress Energy Florida (FRCC)	7:00 a.m.	Florida counties of Alachua, Citrus, Columbia, Dixie, Franklin, Gilchrist, Gulf, Hamilton, Hardee, Hernando, Highlands, Jefferson, Lafayette, Lake, Levy, Madison, Marion, Orange, Osceola, Pasco, Pinellas, Polk, Seminole, Sumter, Suwannee, Taylor, Volusia and Wakulla	Hurricane Frances	2,100	832,898	09/12/04 , 12:00 a.m.
9/06/04	Southern Company (SERC)	1:00 p.m.	Florida, Mississippi, Alabama, Georgia	Hurricane Frances	3,000	99,000	09/09/04, 12:00 p.m.
9/07/04	Georgia System Operations (SERC)	10:00 a.m.	Georgia	Hurricane Frances	2,200	150,000	09/08/04, 12:00 p.m.
9/15/04	Puerto Rico Electric Power Authority (PR)	12:04 p.m.	Whole Island of Puerto Rico	Hurricane Jeanne	1,243	1,423,590	09/23/04 12:00 p.m.
9/15/04	Southern Company (SERC)	7:00 p.m.	Florida, Mississippi, Alabama, Georgia	Hurricane Ivan	916	916,316	09/17/04, 7:00 p.m.
9/16/04	Alabama Electric Cooperative (SERC)	2:00 a.m.	Baldwin County, Alabama, Escambia County, Florida, Washington County, Alabama	Hurricane Ivan	263	75,000	9/16/04, 10:02 a.m.
9/16/04	Duke Energy Company/Duke Power Control Area (SERC)	9:00 p.m.	Western North and South Carolina	Hurricane Ivan	500	175,000	9/20/04, 4:00 p.m.
9/17/04	Progress Energy -Carolinas (SERC)	4:30 a.m.	Western North Carolina	Hurricane Ivan	400	112,000	09/18/04, 12:00 p.m.
9/25/04	Fort Pierce Utilities Authority (FRCC)	5:00 p.m.	City of Fort Pierce, Florida	Hurricane Jeanne	125	26,000	09/26/04, 9:00 a.m.
9/26/04	Tampa Electric Company (FRCC)	2:00 a.m.	Hillsborough, Pasco, and Polk County, Florida	Hurricane Jeanne	1,250	285,300	9/27/04, 12:00 a.m.
9/26/04	Orlando Utilities Commission (FRCC)	3:00 a.m.	Orlando and St. Cloud, Florida	Hurricane Jeanne	350	110,000	09/30/04, 9:00 a.m.

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9/26/04	Progress Energy Florida (FRCC)	6:00 a.m.	Florida counties of Alachua, Bay, Brevard, Citrus, Columbia, Dixie, Flagler, Franklin, Gilchrist, Gulf, Hamilton, Hardee, Hernando, Highlands, Hillsborough, Jefferson, Lafayette, Lake, Leon, Levy, Madison, Marion, Orange, Osceola, Pasco, Pinellas, Polk, Seminole, Sumter, Suwannee, Taylor, Volusia and Wakulla	Hurricane Jeanne	1,800	722,000	10/01/04, 12:00 a.m.
9/27/04	Southern Company (SERC)	8:00 a.m.	Georgia	Hurricane Jeanne	854	85,455	09/27/04, 2:00 p.m.
9/27/04	ISO New England (NPCC) For New Brunswick Electric Power Coordination of joint Reliability Coordinators and Control Area Functions	4:06 p.m.	Nova Scotia	Switch Error Concerning Breakers	-	-	09/27/04, 4:12 p.m.
October							
10/10/04	Puerto Rico Electric Power Authority (PR)	5:09 p.m.	Island Wide	Breaker Failure	All	All	10/11/04, 7:57 p.m.
10/18/04	Pacific Gas and Electric Company (WECC)	10:30 p.m.	Northern California	Severe Storm with High Wind Gusts	140	407,440	10/20/04, 9:00 a.m.
10/25/04	Entergy Transmission (SPP)	11:00 a.m.	Southeastern Louisiana in the New Orleans area	Public Appeal/Breaker Failure and Fire	-	-	10/26/04, 10:00 a.m.
10/28/04	Pacific Gas and Electric Company (WECC)	3:27 p.m.	San Jose, California	Major Transmission Distribution System Interruption	103	59,458	10/28/04, 6:08 p.m.
10/30/04	Consumers Energy (ECAR)	10:00 a.m.	Lower peninsula of Michigan. following area: Grand Rapids, Kalamazoo, Battle Creek, Greenville, Jackson, Flint, Lansing, Allegan, Temperance	Severe Storm with High Wind Gusts	60	122,000	11/01/04, 6:00 p.m.
10/30/04	DTE Energy (ECAR)	12:30 p.m.	Southeastern Michigan	High Wind Gusts	700	159,870	11/03/04, 1:50 p.m.
November							
11/09/04	Keyspan Energy (NPCC)	2:15 p.m.	Sayreville, New Jersey Long Island, New York	Fuel Supply Deficiency - Williams Company: Event for Trans Continental Gas Pipeline	0	0	11/12/04, 1:07p.m.
11/14/04	ISO New England (NPCC) For New Brunswick Electric Power Coordination of joint Reliability Coordinators and Control Area Functions	4:55 a.m.	Nova Scotia	Heavy Snow, High Winds and Rain/Major Distribution System Interruption	165	165,000	11/15/04, 1:31 a.m.
11/23/04	CenterPoint Energy (ERCOT)	10:00 p.m.	Houston, Texas and surrounding suburban areas	Strong Thunderstorms	150	119,000	11/24/04, 1:00 a.m.
11/24/04	Southern Company (SERC)	10:00 a.m.	Georgia	Strong Thunderstorms	100	83,450	11/24/04, 4:00 p.m.
December							
12/01/04	Baltimore Gas & Electric Company (MAAC)	10:00 a.m.	Central Maryland (Baltimore City, Baltimore County, Anne Arundel County, Hartford County, Montgomery County, Calvert County, Prince George's County, Carroll County and Howard County)	High Winds	270	122,000	12/02/04, 11:59 p.m.
12/01/04	Exelon (PECO Energy) MAAC	7:30 a.m.	Bucks, Chester, Delaware, Montgomery, and Philadelphia Counties, Pennsylvania	Heavy Rain and Wind Storm	-	105,312	12/02/04, 10:09 p.m.
12/23/04	American Electric Power (ECAR)	3:37 a.m.	Columbus District	Major Freezing Rain and Ice Storm	800	359,171	12/31/04, 11:00 p.m.

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12/27/04	Pacific Gas and Electric Company (WECC)	7:50 a.m.	Salinas, California and surrounding communities	Severe Weather/Line Relayed	100	95,000	12/27/04, 10:50 a.m.

¹ = Estimated Values.

Note: North American Electric Reliability Council region acronyms are defined in the glossary.

Source: Form EIA-417, "Electric Emergency Incident and Disturbance Report."